

**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of BEDETTI

Application No.

Examiner:

Filed: Herewith

Group Art Unit:

For: FLUID BED GRANULATION PROCESS

**SUBMISSION OF ANNEXES TO INTERNATIONAL PRELIMINARY REPORT ON  
PATENTABILITY (CHAPTER II)**

Mail Stop PCT  
Commissioner for Patents  
P O Box 1450  
Alexandria, VA 22213-1450

Sir:

Please find enclosed a copy of the Annexes to the International Preliminary Report on Patentability (Chapter II). Please note that the amendments to the claims presented herein are for informational purposes only, as they are superseded by a Preliminary Amendment filed herewith.

Respectfully submitted,

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## CLAIMS

1. Fluid bed granulation process of a predetermined substance comprising the steps of:
- forming, through a fluidification air flow of predetermined flow rate, a fluid bed of granules of said substance to be granulated, fed to it in form of seeds,
  - feeding said fluid bed with a continuous flow of a growth substance,
  - inducing the formation of a circulatory movement, substantially vortex-shaped, of the said granules of the substance to be granulated in said fluid bed and through at least part of said fluidification air flow,
  - maintaining and regulating said circulatory movement through said part of the fluidification air flow,
- 15 characterized in that said substantially vortex-shaped circulatory movement has substantially horizontal axis and in that said fluidification air flow is divided into a plurality of fractions having respective flow rates comprised between a minimum value flow rate, sufficient to support the fluid bed, fed at a first zone thereof and a maximum value flow rate, fed in another zone of the same bed, so as to induce and to maintain said circulatory movement, substantially vortex-shaped, with substantially horizontal axis, of the granules of said substance.
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- 25 2. Granulation process according to claim 1, characterized in that the variation in fluidification air flow rates between said first zone where the flow rate is minimum and the zone spaced out from it where the flow rate is maximum, is of the steps type.

3. Granulation process according to claim 1, characterized in that the variation in fluidification air flow rates between said first zone where the flow rate is minimum and the zone where the flow rate is maximum is substantially gradual and continuous.

4. Granulation process according to claim 1, characterized in that said granules of the substance to be granulated are made to flow from one end of the fluid bed where a flow of seeds of said substance is continuously fed to an opposite end thereof where a flow of finished granulated product is continuously discharged with substantially helical movement.

5. Granulation process according to claim 1, characterized in that finished granulated product obtained in said fluid bed is continuously discharged from a bottom of said fluid bed by gravity.

6. Fluid bed granulator comprising a substantially parallelepiped container (2), equipped with a perforated bottom (3) comprised between two opposite long side walls (4, 5) and opposite short side walls (6, 7), characterized in that said bottom (3) is equipped with holes (11) distributed in said bottom (3) with increasing density or pitch starting from a long side wall (4) of the container (2) towards the opposite long side wall (5) of the container itself.

7. Granulator according to claim 6, characterized in that said holes (11) all have the same diameter or opening area.

8. Granulator according to claim 7, characterized in that in said bottom or grid (3) parallel bands (3a, 3b, 3c), of predetermined width, are provided, in each of which the

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respective holes (11) are regularly distributed according to a predetermined "pitch", different from band to band.

9. Fluid bed granulator comprising a substantially parallelepiped container (2), equipped with a perforated  
5 bottom (3) comprised between two opposite long side walls (4, 5) and opposite short side walls (6, 7), characterized in that said bottom (3) is equipped with holes (11) uniformly distributed in the bottom itself and having a different diameter or opening area, the diameter of each  
10 hole (11) gradually increasing as one approaches a long side wall (5) of said container (2), on which a distributor-supplier (10) of granule-growth substance is preferably supported.

10. Fluid bed granulator comprising a perforated bottom (3)  
15 according to any one of claims 6 to 9, characterized in that it comprises a plurality of slits (14), of predetermined width, for the release of finished granules from the container (2), and means for feeding a flow (A) of air or another suitable classification gas into said fluid  
20 bed through said slits (14).